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ABSTRACT

The report presents the findings of a study of the effects of 2 years of using the Orton Gillingham tutorial program with 128 middle school (grades 5 through 8) language disabled students. Students were seen in 45 minute tutorial periods from three to five times a week with some students (the self contained group) receiving instruction in both language and math for a minimum of 2 hours daily, and some also receiving speech and language therapy. The major portion of the document consists of 15 tables presenting data in statistical form on the following areas: characteristics of the groups, comparison of progress between mean gain and mean expected gain of all students, progress by educational levels in oral reading, progress by educational levels in language and math (a comparison of special and regular education), progress of self contained students in oral reading, and progress of self contained students in language and math. Among conclusions are the following: students receiving the tutorial services achieved approximately three quarters the rate of all students in regular education suggesting the effectiveness of the Gillingham method, the Gillingham method was more successful in teaching spelling than silent or oral reading skills to students in the basic skill development class, clarification of the eligibility criteria for special needs language disabled students were required, and deficits of students entering grades 7 and 8 were greater because they were not diagnosed and served at an earlier age. (DB)

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A STUDY: THE ACQUISITION OF LANGUAGE SKILLS after TWO YEARS OF TUTORIAL PROGRAMMING

Rupert A. Nock Middle School
Newburyport, Massachusetts

Presented on November 15, 1980

Orton Society Conference
Boston, Massachusetts

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TABLE OF CONTENTS

Page

BACKGROUND INFORMATION 1

ANALYSIS OF TESTS. 3

STATISTICAL DATA 8

TABLES 1 - 3 . . . . . .8, 9, 10

Characteristics of the Groups

TABLES 4 - 11 . . . . . 11 - 18

Comparison of Progress between Mean Gain and Mean Expected Gain by All Students

TABLE 12. 19

Progress of Educational Levels in Oral Reading, Grades 5 - 8

TABLE 13. 20

Progress by Educational Levels in Language and Math, Grades 5 - 8; a Comparison of Special and Regular Education

TABLE 14. 21

Progress of Self-Contained Students in Oral Reading

TABLE 15. 22

Progress by Self-Contained Students in Language and Math

SUMMARY AND CONCLUSIONS. 23

BIBLIOGRAPHY 25

A STUDY: THE ACQUISITION OF LANGUAGE SKILLS
after
TWO YEARS OF TUTORIAL PROGRAMMING

The Orton Gillingham tutorial program, through the Special Education Department, has been the remedial process provided to dyslexic students. These services have been offered from early elementary through High School for the past five years. Approximately 10% of the total population in the United States have difficulty mastering the English language. At the time of this study Newburyport's Middle School population was 965, and there were 128 Middle School students (13%) receiving tutorial help in the Special Education Department. There is some individual tutoring, but most is accomplished in small groups. Math help is given to a limited number of students where it is apparent that the dyslexic factors are encompassing this area. Title I services are available for math and the less severe language program in three of the four elementary schools, Middle School and Grades 9 and 10 at the High School.

In order for a public school Gillingham program to be effectively implemented, it must have administrative approval and competent staffing. The Superintendent of Schools, the School Committee and Administrative Staff have actively and continuously supported the program. The Director of Special Education, Mrs. Welch, has high expectations and closely monitors all program services in the Newburyport Public Schools. The administrative Staff and Director of Special Education meticulously screened applicants for additional L. D. teaching positions. The L. D. teachers in the Newburyport Public Schools have advanced degrees and are certified in Special Needs. The Newburyport Public Schools have provided quality training for all L. D. teachers by conducting Orton-Gillingham Language Training courses during 1975-76 and the 1977-78 school

years. These courses emphasized a long-term supervised practicum with required seminars and reading to provide the theoretical base for the practical teaching experience. During 1975-76, an intensive training program course was provided by an Orton-Gillingham Language Training Consultant and during 1977-78 an advanced course in Gillingham methodology was provided by Mrs. Mary Chatillon, Director of Reading, Language Disorders Unit at the Massachusetts General Hospital. During the years 1978-80, consulting and supervisory services by Mrs. Chatillon have been available to the staff on a regular basis to insure the continued effectiveness of the program and further develop staff expertise and supportive services. All day In-Service Training Workshops are held several times a year.

There are four L. D. teachers servicing language disabled students in a tutorial setting in grades five through eight. In addition, due to the severity of the language problem, lower functioning and endowment levels and/or emotional problems, there are four L. D. teachers servicing students on a daily basis for extended periods of time in basic skills. Mainstreaming is provided to all students in special subjects; i.e., typing, art, music, physical education, home economics and industrial arts.

Although data is available at both the elementary and High School levels, this paper is concerned only with the 128 Middle School children in grades five through eight who received tutorial help or who were serviced in Basic Skill Development classes during the academic years, 1978-80. Tutorial students were seen in 45 minute tutorial periods ranging from three to five times per week, according to need, for language. A limited number were serviced in math. Students in the Basic Skill Development programs are instructed in language and math for two hours each day, minimally. In addition to tutorial services, approximately twelve of these students were serviced by the Speech and Language

Therapist. Neither Chapter 766 nor P. L. 94-142 have yet to establish a criteria for a special need in the language area. Teachers' reports, student intellectual functioning and endowment levels, the number and type of deficits ranging from one and a half to two grades below grade level, parental value and expectations and sometimes just plain common sense were all factors entering into whether a student is recommended for the program.

ANALYSIS OF TESTS

Four standardized tests, Gilmore Oral Reading, Metropolitan Achievement (Math and Silent Reading), Stanford Spelling, were administered to each of the 128 students yearly to measure the cognitive progress. A summary of the statistical data is presented in Tables 1 through 15.

Table 1 shows the enrollment in grades five through eight and in the Basic Skill Development classes. There are more than double the number of boys than girls. There were no girls in the ED-LD class. The mean I. Q. of these students receiving tutorial help was significantly higher than the students in the Basic Skill Development classes. There were no significant I. Q. differences between the girls and boys.

Table 2 indicates rather clearly that there is a disproportionately small number of bright students in the program. Only fifteen students (12%) were functioning above the average range. No student was functioning within the superior range. Most likely the bright dyslexic was able to cope within the classroom. There were no students in the Language Training class functioning above the average range.

Table 3 indicates rather surprisingly minimal deficits with entering fifth and sixth graders. Perhaps some of these students could have been handled on a remedial basis from other support systems and/or curriculum

modifications. These students had had L. D. tutorial before the Fall of 1978, averaging about 2.3 years. The deficits became greater with seventh and eighth graders because those who need to remain in the program are, of course, the more severe dyslexics. In addition sixth and seventh graders are at a vulnerable age. The onset of puberty is a time when there is usually disequilibrium in cognitive functioning and personality stability.*[1] Students receiving tutorial help in the eighth grade were slightly more impaired than those in the Language Training class. The Table also shows that both emotional and learning problems were interfering with students entering the ED-LD class. As would be expected, deficits in the developmentally disabled classes were the greatest.

Tables 4 - 11 should be viewed within the following context. In some instances, average gains by special needs students do not look impressive when compared to the norms of the tests. It should be kept in mind that such norms are based upon a "normal" population of students who do not have dyslexia and mental handicaps of a special needs population. As Arnold F. Checchi, Federal Evaluator and Consultant to the Newburyport School System has stated, "In general, then, any average gain that comes close to approaching that of a normal population should be considered outstanding..." (Table 13 shows the comparison). It is my understanding that neither the Commonwealth of Massachusetts

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*H. Epstein and C. Toepfer, Jr., report the following in their article, "A Neuroscience Basis for Reorganizing Middle Grades Education."

[1]"Brain growth periodization during emerging adolescence is an aspect of development not yet tapped by educators to help organize middle grades programs that will facilitate improved cognitive and affective growth with emotional self-clarification. This periodization was initially reported to the middle grades educational community by Epstein and sets forth that, in perhaps 85 percent of all youngsters between ages 12 and 14, the brain virtually ceases to grow. This slow brain growth period parallels the transescent's pubertal metamorphosis in a large number of individual circumstances.....The second component appears in a set of five discrete periods of extra growth, approximately in the age intervals of 3 to 10 months; 2 to 4 years; 6 to 8 years; 10 to 12 years; and 14 to 16. These brain growth spurts appear in normal children from quite a number of countries."

nor the Federal Government has established guidelines to minimal, satisfactory or excellent progress.

Table 4 indicates that in the important area of silent reading comprehension, spelling and oral reading fifth graders made progress close to non-special needs student population while four students showed no gains in math.

Table 5 shows that in the area of math and oral reading skills, sixth graders made progress close to non-special needs students, but in spelling and silent reading, approximately half of the progress of the non-special needs population was made.

Table 6 indicates that seventh graders made better progress than a non-special needs population in oral reading skills, while slightly more than half the progress of non-special needs population was made in the other areas.

Table 7 suggests that minimal progress was made in spelling by eighth graders, possibly due to the decreased tutorial emphasis in the area, while oral reading and math skills showed good improvement when compared to non-special needs population. Silent reading skills increased slightly more than half the rate of the non-special needs population.

Table 8 shows that the severely impaired language students in the Language Training class made better progress than the non-special needs population in oral reading skills, and nearly as good progress in silent reading comprehension. In the areas of math and spelling, slightly less than half the normal progress was made.

Table 9 indicates that the emotional problems of the students in the ED-LD class are interfering with academic progress, which is clearly much less than half the normal population, except in spelling skills.

Table 10 reflects the progress made by fifth and sixth grade developmentally disabled students. As would be expected, comprehension and math skills are very

difficult for these low functioning students. These students did acquire decoding skills close to the normal population. Spelling progress was better than half the normal rate.

Table 11 indicates the same type of pattern exists with the seventh and eighth grade developmentally disabled students, as with the younger ones. However comprehension and math skills were not as impaired.

Table 12 shows the progress made by students in grades five through eight in decoding and oral reading comprehension skills. Note the time lapse is different. Fifth graders were measured for only the time spent in the Middle School in that grade, while sixth, seventh and eighth graders were measured for the two-year period in the Middle School. The time lapse for eighth graders was less than two years because there was a greater turnover; i.e., more students received tutorial help, but for a lesser amount of time. With the exception of eighth graders acquiring comprehension skills, progress in both areas and at all levels equaled the normal rate (i.e., one grade progress in one year), which can be considered as "outstanding." Use of the Gillingham technique has been most effective.

Table 13 shows the progress made by educational levels, grades five through eight, comparing special needs students with regular education students. In regard to the latter, the group Stanford Achievement test results, Form A & B, were used for this comparison. Regular education students generally tended to acquire skills at the rate of one grade per year. In acquiring the language skills of silent reading comprehension and spelling, fifth graders made nearly as much progress as regular education students, but in math, no progress was made by the four students receiving math help. Generally, special education students made approximately three-quarters the progress of regular education students with the gap being the greatest subsequent to grade five. In

assessing progress of Special Education students according to the time in the tutorial program, the best progress with the exception of math was made by fifth graders. The sixth and eighth grade groups made the best progress in math, while the slower progress was made by the same groups in silent reading comprehension and spelling.

Table 14 indicates the progress of Basic Skill Development students in oral reading skills. Considering the severity of the language disorders and the intellectual functioning level, "outstanding" progress was made by students in the Language Training class, by the younger developmentally disabled in decoding skills, and by the older developmentally disabled. There was regression in comprehension skills by students in the ED-LD class.

Table 15 shows the progress made by the Basic Skill Development students in silent reading, spelling and math. The language training students made good progress in the important area of silent reading. All other Basic Skill Development groups made significant progress in spelling.

Unfortunately, the same progress has not been recorded in the important area of silent reading comprehension for these groups. This, as one would expect, is due to the following factors: (1) low intellectual functioning, (2) low native endowment, (3) emotional programs interfering with learning.

Enrollment in Grades 5-8 and Basic Skill Development Classes by Sex and I.Q.

Table 1

Grade	No. Boys	Mean IQ	No. Girls	Mean IQ	Total	Mean IQ
5	15	104	5	107	20	106
6	9	100	9	93	18	97
7	9	97	3	85	12	91
8	17	101	8	89	25	95
Language Training	9	93	3	84	12	89
ED-LD	11	81	0	--	11	81
Developmentally Disabled (5-6)	9	74	8	74	17	74
Developmentally Disabled (7-8)	9	76	4	69	13	73
TOTAL	88 (69%)		40 (31%)		128	

INTELLECTUAL FUNCTIONING (WISC-R FULL SCALE) Table 2

Grade	Retarded	Dull Normal	Average	Bright Normal	Superior	Very Superior	TOTAL
5		1	13	3	3		20 16%
6	2	4	10	0	2		18 14%
7	1	3	6	2			12 9%
8		8	13	3	1		25 20%
Language Training	1	4	7				12 9%
ED-LD	2	5	3	1			11 9%
Developmentally Disabled (5-6)	11	4	2				17 13%
Developmentally Disabled (7-8)	8	3	2				13 10%
TOTAL	25	32	56	9	6	0	128
% of "	19%	25%	44%	7%	5%	0%	

Deficits of Students Entering Programs

Table 3

	Reading Accuracy	Reading Comp.	Silent Reading	Spelling	Math	Mean of Deficits
Ave. deficit of entering 5th grade students starting Tutorial programs in Fall, 1978	1.0	0.8	1.0	1.0	0.5	0.9
Ave. deficit of entering 6th grade students starting Tutorial programs in Fall, '78	1.0	1.0	0.9	0.7	0.5	0.8
Ave. deficit of entering 7th grade students starting Tutorial programs in Fall, '78	1.5	1.5	1.6	1.3	1.3	1.4
Ave. deficit of entering 8th grade students starting Tutorial programs in Fall, '78	2.4	2.0	2.5	2.2	2.3	2.3
Ave. deficit of students entering Language Class	1.7	2.1	2.3	1.8	1.5	1.9
Ave. deficit of students entering ED-LD Class.	2.6	1.1	2.7	2.5	2.8	2.3
Ave. deficit of students entering Developmentally Disabled Class (Grade 5)	2.3	2.7	2.9	2.4	2.1	2.5
Ave. deficit of students entering Developmentally Disabled Class (Grade 7)	2.8	3.3	4.2	3.3	4.5	3.6

Pre-Post program gains in Silent Reading Comprehension, Math, Spelling & Oral Reading - attained by Grade Five students enrolled in 1978-80.

TABLE 4

(N = 20)

TEST	Mean Pre Test GE		Mean Post Test GE		Mean Pre-Post Gain GE		Expected Gain* GE	Difference Between Mean Gain & Mean Expected Gain GE	
Metro Silent Reading Comp.	4.2		5.0		0.8		1.1	-0.3	
Metro Arithmetic (4)	4.4		4.4		0.0		1.0	-1.0	
Stanford Spelling	3.9		4.9		1.0		1.1	-0.1	
	AGE**	CGE***	AGE	CGE	AGE	CGE		AGE	CGE
Gilmore Oral Reading	4.2	5.0	5.2	6.1	1.0	1.1	1.1	-0.1	+0.0

NOTE: Approximately 11.5 months elapsed between the average student's pre and post testing dates.

* "Expected gain" is based on that gain which a NON 94-142 Population of students would be expected to achieve. "Expected gain" may be converted to "months gain" by moving the decimal point one place to the right.

** AGE refers to Accuracy Grade Equivalent Score.

*** CGE refers to Comprehension Grade Equivalent Score.

Pre-Post program gains in Silent Reading Comprehension, Math, Spelling & Oral Reading - attained by Grade Six students enrolled during 1978-80

TABLE 5

(N = 8)

TEST	Mean Pre Test GE	Mean Post Test GE	Mean Pre-Post Gain GE	Expected Gain* GE	Difference Between Mean Gain & Mean Expected Gain GE
Metro Silent Reading Comp.	3.7	5.2	1.5	2.3	-0.8
Metro Arithmetic (5)	3.1	4.6	1.2	1.3	-0.1
Stanford Spelling	4.2	5.7	1.5	2.3	-1.3
	AGE** CGE***	AGE CGE	AGE CGE		AGE CGE
Gilmore Oral Reading	4.0 4.2	6.2 6.8	2.2 2.6	2.3	-0.1 +0.3

NOTE: Approximately 23.0 months elapsed between the average student's pre and post testing dates.

* "Expected gain" is based on that gain which a NON 94-142 Population of students would be expected to achieve. "Expected gain" may be converted to "months gain" by moving the decimal point one place to the right.

** AGE refers to Accuracy Grade Equivalent Score.

*** CGE refers to Comprehension Grade Equivalent Score.

Pre-Post program gains in Silent Reading Comprehension, Math, Spelling & Oral Reading - attained by Grade Seven students enrolled during 1978-80.

TABLE 6

(N = 16)

TEST	Mean Pre Test GE		Mean Post Test GE		Mean Pre-Post Gain GE		Expected Gain* GE	Difference Between Mean Gain & Mean Expected Gain GE	
Metro Silent Reading Comp.	4.3		5.6		1.3		1.9	-0.6	
Metro Arithmetic (6)	4.6		5.8		1.2		2.0	-0.8	
Stanford Spelling	4.8		5.9		1.1		1.9	-0.8	
	AGE**	CGE***	AGE	CGE	AGE	CGE		AGE	CGE
Gilmore Oral Reading	4.5	4.9	6.5	7.2	2.3	2.2	1.9	+0.1	+0.1

NOTE: Approximately 19.0 months elapsed between the average student's pre and post testing dates.

* "Expected gain" is based on that gain which a NON 94-142 Population of students would be expected to achieve. "Expected gain" may be converted to "months gain" by moving the decimal point one place to the right.

** AGE refers to Accuracy Grade Equivalent Score.

*** CGE refers to Comprehension Grade Equivalent Score.

Pre-Post program gains in Silent Reading Comprehension, Math, Spelling & Oral Reading - attained by Grade Eight students enrolled during 1978-80.

TABLE 7

(N = 25)

TEST	Mean Pre Test GE	Mean Post Test GE	Mean Pre-Post Gain GE	Expected Gain* GE	Difference Between Mean Gain & Mean Expected Gain GE
Metro Silent Reading Comp.	4.8	5.8	1.0	1.9	-0.9
Metro Arithmetic (7)	4.2	5.8	1.6	1.8	-0.2
Stanford Spelling	5.0	5.6	0.6	1.9	-1.3
	AGE** CGE***	AGE CGE	AGE CGE		AGE CGE
Gilmore Oral Reading	4.8 5.5	6.5 6.9	1.7 1.4	1.9	-0.2 -0.5

NOTE: Approximately 19 months elapsed between the average student's pre and post testing dates.

* "Expected gain" is based on that gain which a NON 94-142 Population of students would be expected to achieve. "Expected gain" may be converted to "months gain" by moving the decimal point one place to the right.

** AGE refers to Accuracy Grade Equivalent Score.

*** CGE refers to Comprehension Grade Equivalent Score.

Pre-Post program gains in Silent Reading Comprehension, Math, Spelling & Oral Reading - attained by students in Language Training Class during 1976-80.

TABLE 8

(N = 12)

TEST	Mean Pre Test GE	Mean Post Test GE	Mean Pre-Post Gain GE	Expected Gain* GE	Difference Between Mean Gain & Mean Expected Gain GE
Metro Silent Reading Comp.	3.4	4.3	0.9	1.1	-0.2
Metro Arithmetic	3.8	4.3	0.5	1.1	-0.6
Stanford Spelling	4.4	4.9	0.5	1.1	-0.6
	AGE** CGE***	AGE CGE	AGE CGE		AGE CGE
Gilmore Oral Reading	4.1 4.9	5.6 6.2	1.5 1.3	1.1	0.4 0.2

NOTE: Approximately 11.4 months elapsed between the average student's pre and post testing dates.

* "Expected gain" is based on that gain which a NON 94-142 Population of students would be expected to achieve. "Expected gain" may be converted to "months gain" by moving the decimal point one place to the right.

** AGE refers to Accuracy Grade Equivalent Score.

*** CGE refers to Comprehension Grade Equivalent Score.

Pre-Post program gains in Silent Reading Comprehension, Math, Spelling & Oral Reading - attained by students in ED-LD Class, during 1978-80

TABLE 9

(N = 10)

TEST	Mean Pre Test		Mean Post Test		Mean Pre-Post Gain		Expected Gain*	Difference Between Mean Gain & Mean Expected Gain	
	GE		GE		GE		GE	GE	
Metro Silent Reading Comp.	3.5		3.5		0.0		1.7	-1.7	
Metro Arithmetic	3.1		3.4		0.3		1.7	-1.4	
Stanford Spelling	4.0		4.8		0.8		1.7	-0.9	
	AGE**	CGE***	AGE	CGE	AGE	CGE		AGE	CGE
Gilmore Oral Reading	3.6	5.9	4.2	5.3	0.6	-0.6	1.7	-1.1	-2.3

NOTE: Approximately 16.8 months elapsed between the average student's pre and post testing dates.

* "Expected gain" is based on that gain which a NON 94-142 Population of students would be expected to achieve. "Expected gain" may be converted to "months gain" by moving the decimal point one place to the right.

** AGE refers to Accuracy Grade Equivalent Score.

*** CGE refers to Comprehension Grade Equivalent Score.

Pre-Post program gains in Silent Reading Comprehension, Math, Spelling & Oral Reading - attained by Fifth & Sixth Grade Developmentally Disabled students enrolled during 1978-80.

TABLE 10

(N = 17)

TEST	Mean Pre Test GE	Mean Post Test GE	Mean Pre-Post Gain GE	Expected Gain* GE	Difference Between Mean Gain & Mean Expected Gain GE
Metro Silent Reading Comp.	2.5	2.3	-0.2	2.0	-2.2
Metro Arithmetic (14)	3.3	3.2	-0.1	1.8	-1.9
Stanford Spelling	2.7	3.9	1.2	2.0	-0.8
	AGE** CGE***	AGE CGE	AGE CGE		AGE CGE
Gilmore Oral Reading	2.8 3.3	4.7 3.6	1.9 0.3	2.0	-0.1 -1.7

NOTE: Approximately 20.0 months elapsed between the average student's pre and post testing dates.

* "Expected gain" is based on that gain which a NON 94-142 Population of students would be expected to achieve. "Expected gain" may be converted to "months gain" by moving the decimal point one place to the right.

** AGE refers to Accuracy Grade Equivalent Score.

*** CGE refers to Comprehension Grade Equivalent Score.

Pre-Post program gains in Silent Reading Comprehension, Math, Spelling & Oral Reading - attained by Seventh & Eighth Grade Developmentally Disabled, during academic year 1978-80.

TABLE II

(N = 13)

TEST	Mean Pre Test		Mean Post Test		Mean Pre-Post Gain		Expected Gain*	Difference Between Mean Gain & Mean Expected Gain	
	GE		GE		GE		GE	GE	
Metro Silent Reading Comp.	3.0		3.3		0.3		1.1	-0.8	
Metro Arithmetic	2.8		3.3		0.5		1.1	-0.6	
Stanford Spelling	3.7		4.5		0.8		1.1	-0.3	
	AGE**	CGE***	AGE	CGE	AGE	CGE		AGE	CGE
Gilmore Oral Reading	4.1	4.0	4.9	5.0	0.8	1.0	1.1	-0.3	-0.1

NOTE: Approximately 11.2 months elapsed between the average student's pre and post testing dates.

* "Expected gain" is based on that gain which a NON 94-142 Population of students would be expected to achieve. "Expected gain" may be converted to "months gain" by moving the decimal point one place to the right.

** AGE refers to Accuracy Grade Equivalent Score.

*** CGE refers to Comprehension Grade Equivalent Score.

TABLE 12

Progress by Educational Levels in Oral Reading-Accuracy and Comprehension

Grades 5 - 8

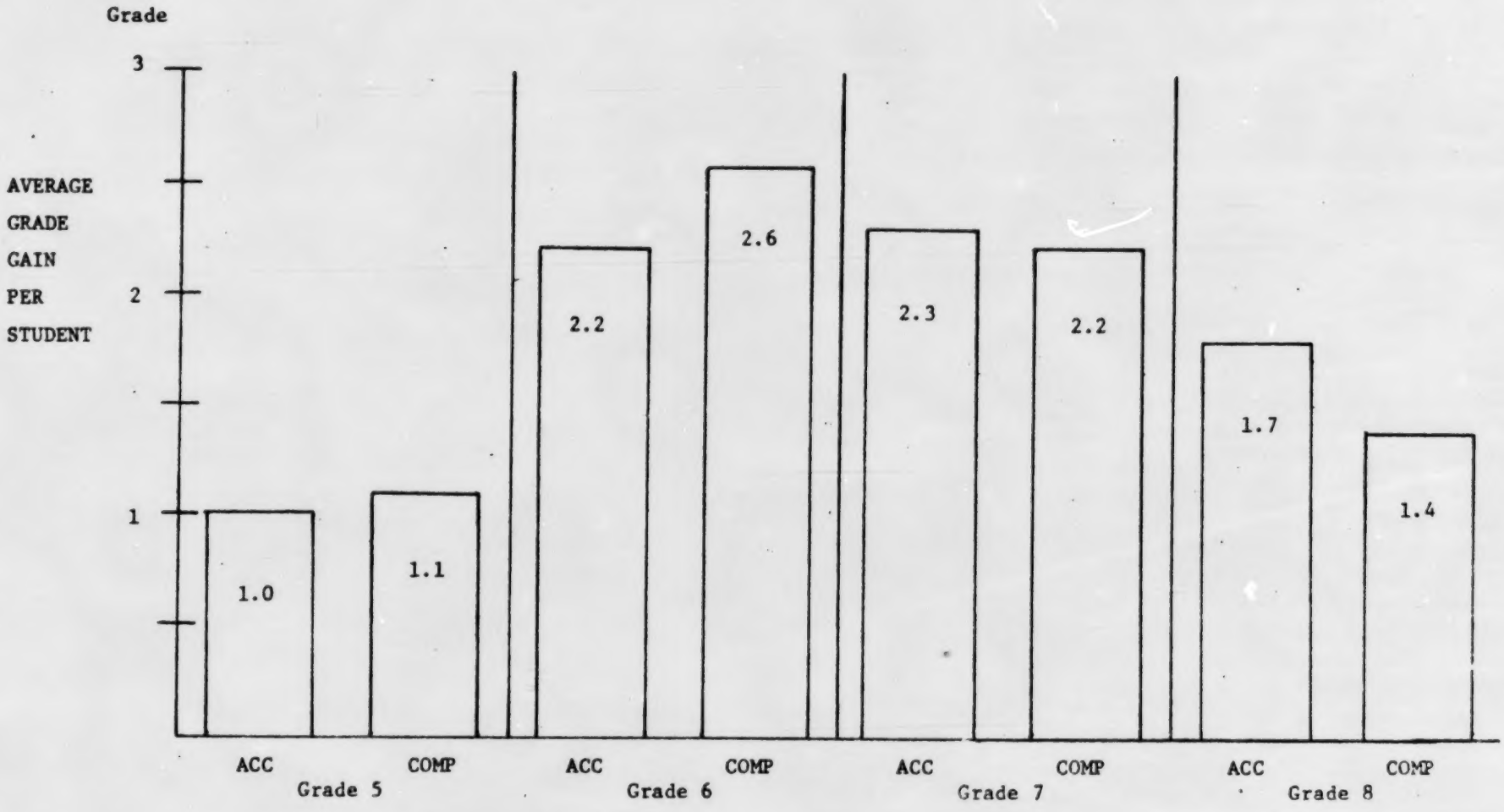
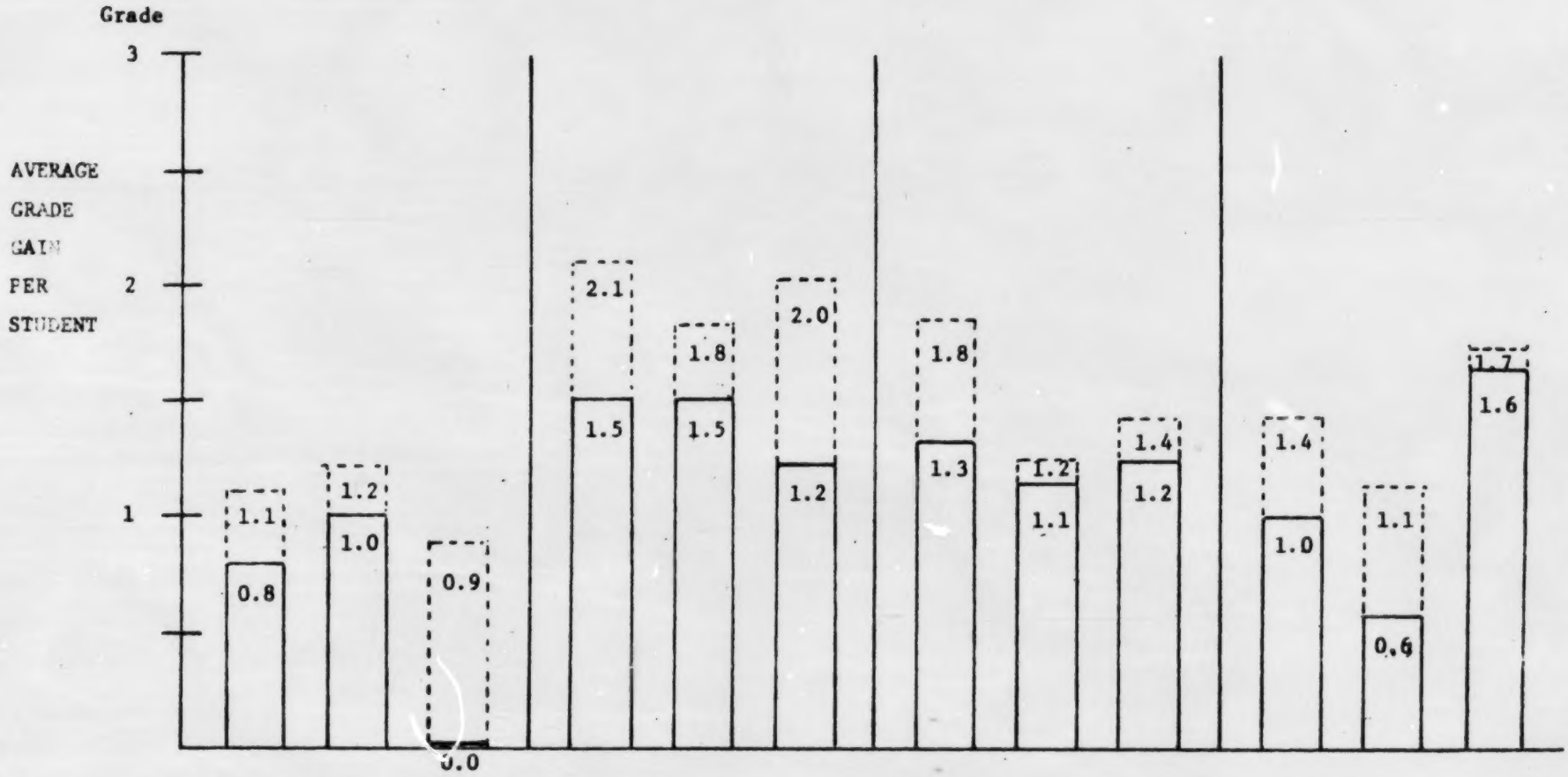


TABLE 13

Progress by Educational Levels in Silent Reading, Spelling & Math

Grades 5 - 8 Comparing Special & Regular Education



Grade 5	Grade 6	Grade 7	Grade 8
Time Lapse	Time Lapse	Time Lapse	Time Lapse
11.5 mo.	23.0 mo.	19.0 mo.	19.0 mo.

Regular Education is designated by Dotted Area.

TABLE 14

Progress of Students in Basic Skill Development Classrooms in Oral Reading - Accuracy and Comprehension

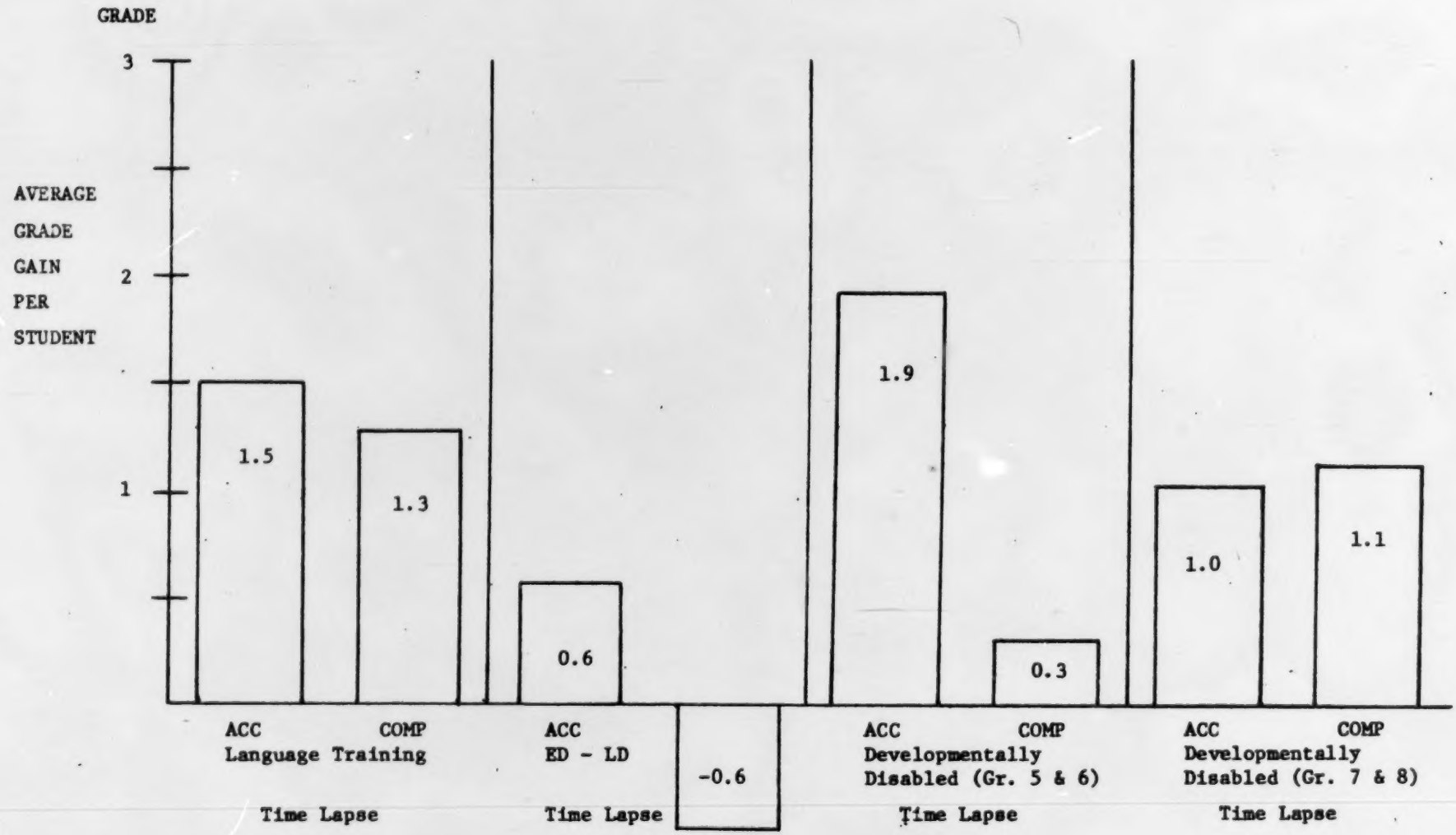
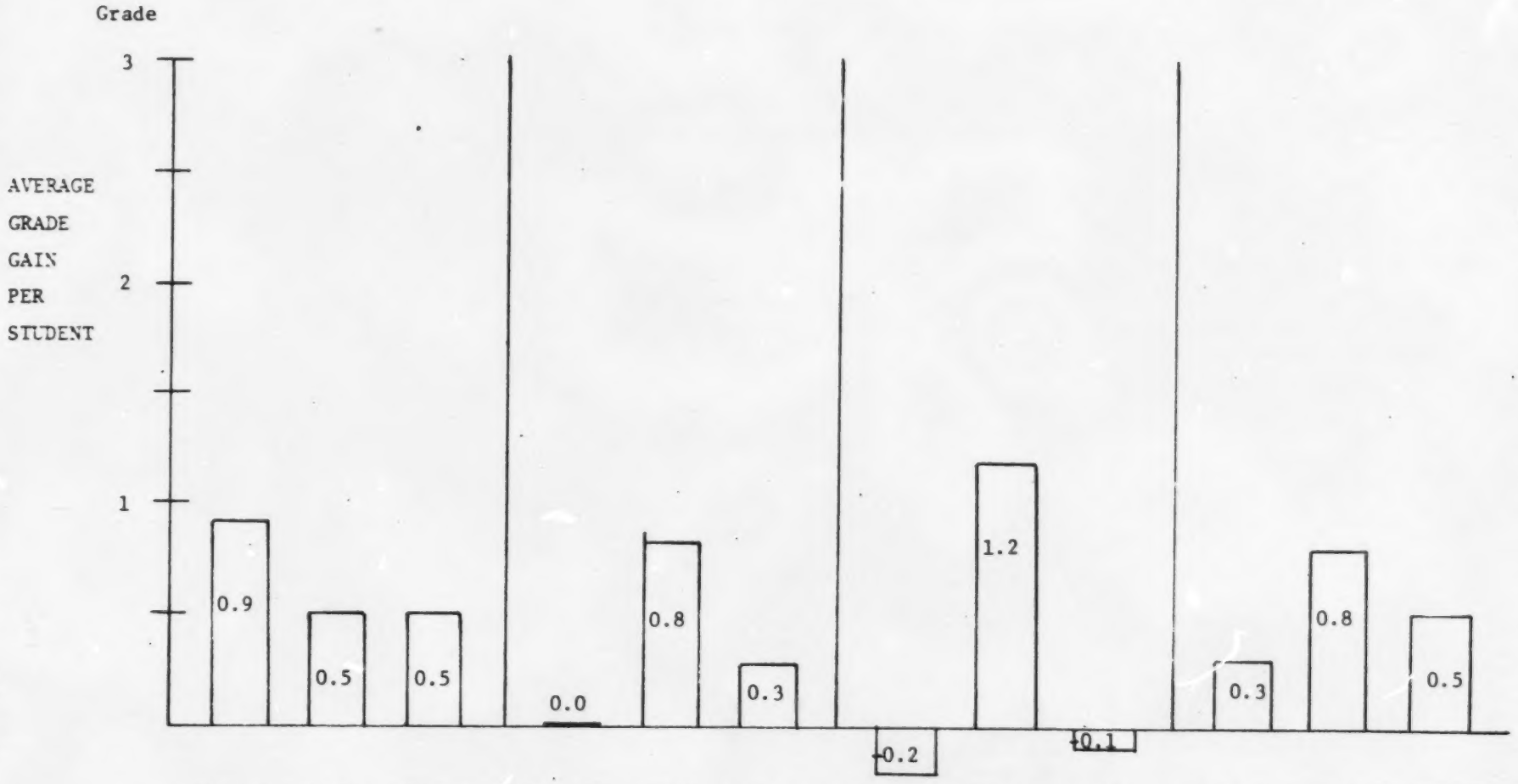


TABLE 15

Progress of Basic Skills Development Class in Silent Reading, Spelling, Math



SUMMARY AND CONCLUSIONS

1. According to this study, Special Education students receiving tutorial services tended to achieve academically approximately three-quarters the rate of those students in regular education. The Gillingham method in Language Training has been most effective and should be continued. Special Education students made outstanding progress in decoding skills and oral reading comprehension. Regular education students generally tended to acquire skills in silent reading, spelling and math at the rate of one grade per year.

2. Use of Gillingham Methodology proved to be successful in teaching spelling to the behaviorally disturbed and the developmentally disabled students in Basic Skill Development classes. Less improvement was seen in the acquisition of silent reading skills by ED-LD and the developmentally disabled students. The oral reading comprehension skills showed little improvement by ED-LD students. However, the primary purpose of students being placed in the ED-LD classroom is modifying the unacceptable behavioral patterns; learning goals are secondary.

3. There should be a clarification of the criteria used for a special needs language disabled student. Guidelines have never been established either by the Commonwealth of Massachusetts in Chapter 766 or by the Federal Government in P. L. 94-142. It is very timely, for future programming within the Newburyport Public Schools, that an eligibility criteria for Special Needs Services by refined.

4. Teachers should be alerted to the fact that many bright dyslexics may not be receiving the needed help, due to their relative good coping skills. These are the students who may be headed for college, technical schools and who are potential community leaders. It is unlikely that these students are

being seen in Title I since they may be coping in the classroom and probably functioning above the 40th percentile, the cut-off point for Title I.

5. Since there are rather minimal deficits with students entering fifth and sixth grade, there should be careful screening and possible revision of the criteria for these students with minimal deficits of less than a grade. Perhaps some of these students could be handled in a remedial basis from other support systems and/or curriculum modifications. These minimal deficits may well reflect the effective tutoring program at the elementary level. Concern has been expressed that these students will need Special Education support upon entering the fifth grade in a larger school with team teaching.

6. The deficits with students entering grades 7 & 8 were greater because they were not diagnosed and serviced at an earlier age. These students are also at a vulnerable age due to the onset of puberty where there may be a plateau in the learning curve.

7. The limited progress made by the eighth grade group in spelling may be due to the emphasis being placed upon language usage as a form of written communication. A good phonetic approach to spelling with less of a priority upon perfectionism is acceptable. As reported in Table 3, the eighth grade group had significant deficits.

> It is difficult to measure the positive therapeutic effects on the student who has gained increased success due to a tutorial program. However, it is apparent the students have a better self-image and less of a need to act out behaviorally due to academic frustration in the regular classroom.

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